

10/089/77

1/27

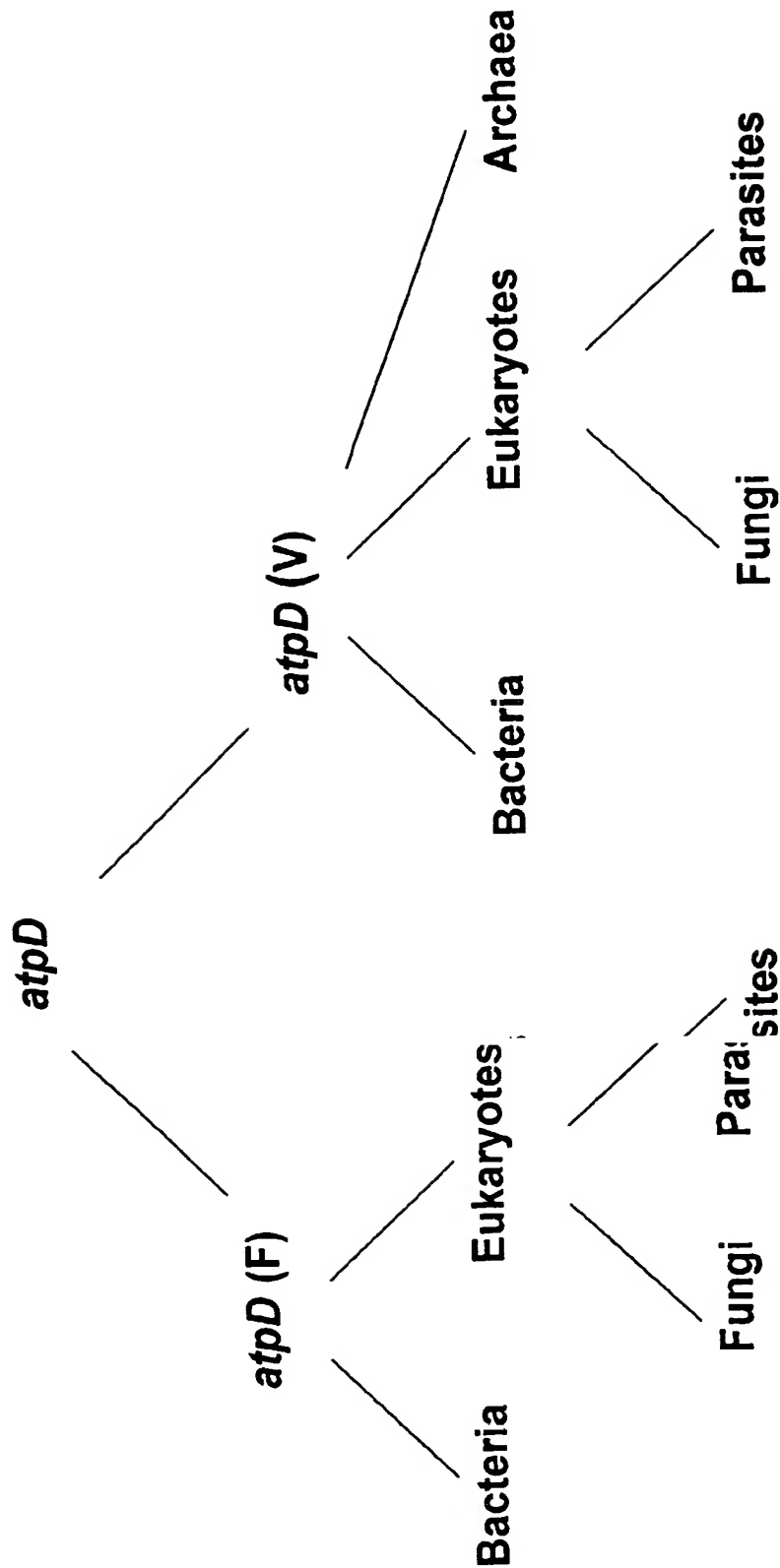


FIG. 1

10/089177

2 / 27

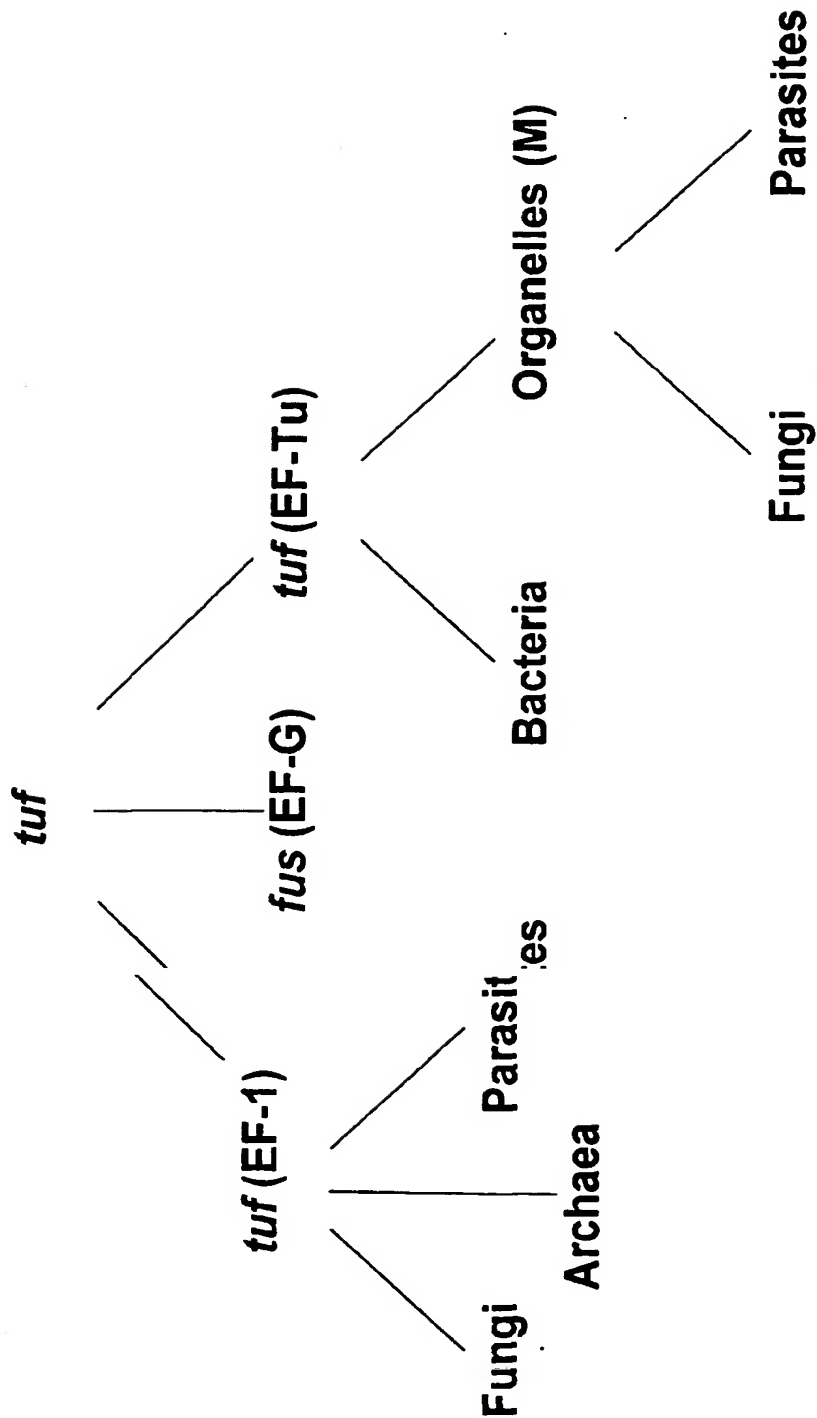
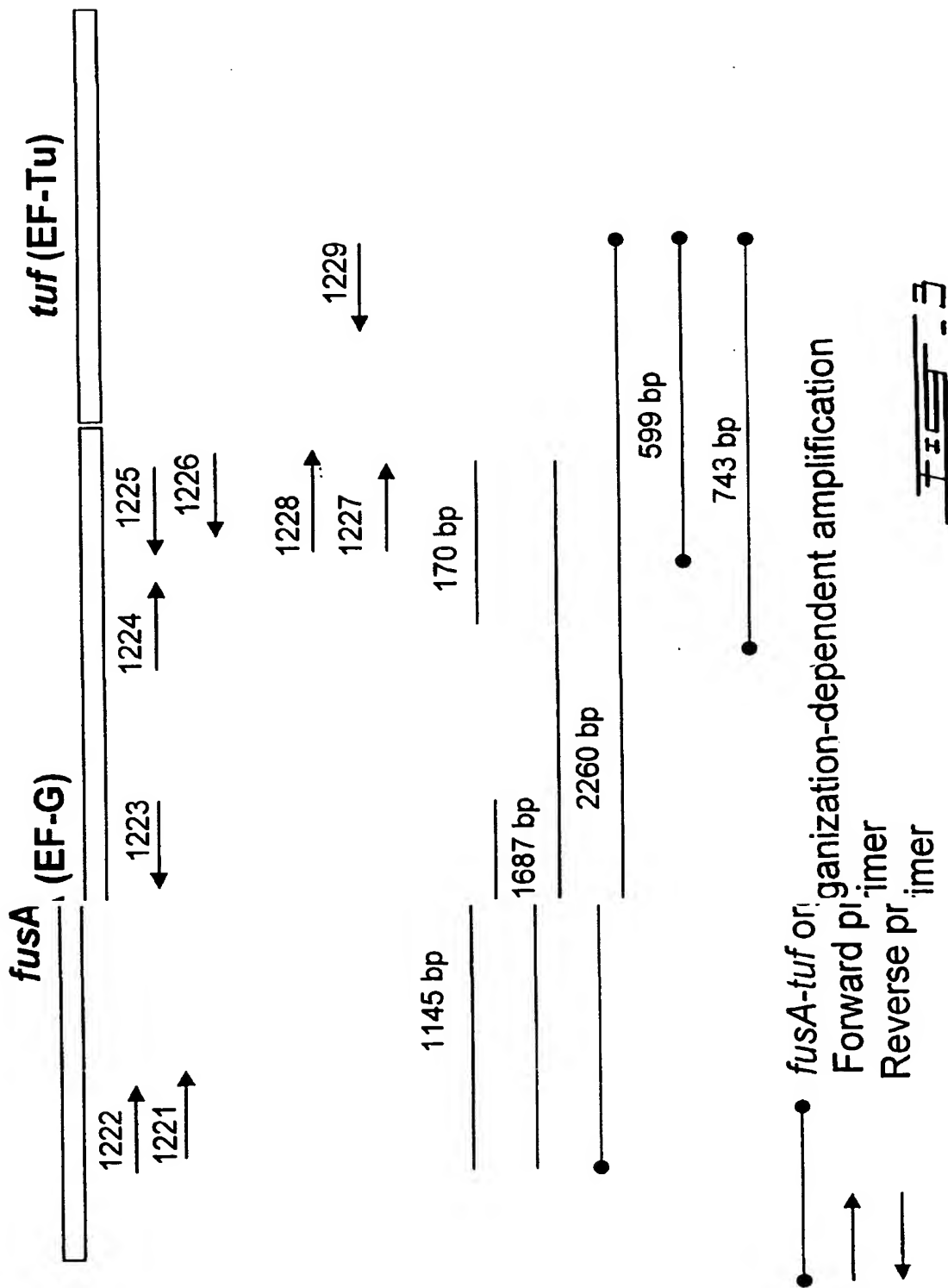


FIG. 2

10/089/77

3/27



10/089177

4/27

S. aureus	REHLLSRNVGVPYI	120	130	140	150	160	170	180	190	200
S. epidermidis	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI
E. durans (A)	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI
E. hirae (A)	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI
E. mundtii (A)	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI
E. faecium (A)	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI
E. cecorum	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI
E. columbae	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI
E. cassel. flavus (A)	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI
E. gallinarum (A)	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI
E. faecalis	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI
E. avium (A)	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI
E. raffinosus (A)	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI
E. dispar (A)	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI
E. malodoratus (A)	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI
E. pseudoavium (A)	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI
E. sulfureus	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI
E. saccharolyticus	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI
E. solitarius	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI	REHLLSRNVGVPYI

4a

10/089177

5/27

210

<i>S. aureus</i>	TPERDSDKPFMMPVEDVI	220	230	240	250	260	270	280	290
<i>S. epidermidis</i>	TPERDSDKPFMMPVEDVI	SITGRGTATGRVERGQIKVGEEVEILGLH.DTSKTTVTGVEMFRKLLDYAEAGDNIGALLRGVAREDIQRGGVLA							
<i>S. durans</i> (A)	TPERDNDKPFMMPVEDVI	SITGRGTATGRVERGQIKVGEEVEILGMH.ETSKTTVTGVEMFRKLLDYAEAGDNIGALLRGVAREDIQRGGVLA							
<i>E. hirae</i> (A)	TPERDNDKPFMMPVEDVI	SITGRGTATGRVERGQVRVGDVVDIVGIAEETAQTTVTGVEMFRKLLDYAEAGDNIGALLRGVAREDIQRGGVLA							
<i>E. mundtii</i> (A)	TPERDNDKPFMMPVEDVI	SITGRGTATGRVERGQVRVGDVVDIVGIAEETAQTTVTGVEMFRKLLDYAEAGDNIGALLRGVAREDIQRGGVLA							
<i>E. faecium</i> (A)	TPERDNDKPFMMPVEDVI	SITGRGTATGRVERGQVRVGDVVDIVGIAEETAQTTVTGVEMFRKLLDYAEAGDNIGALLRGVAREDIQRGGVLA							
<i>E. cecorum</i>	TPERDNDKPFMMPVEDVI	SITGRGTATGRVERGQVRVGDVEVWVGIAEETSKTTVTGVEMFRKLLDYAEAGDNIGALLRGVAREDIQRGGVLA							
<i>E. columbae</i>	TPERDNDKPFMMPVEDVI	SITGRGTATGRVERGQVRVGDVEIVGIDHSKTTVTGVEMFRKLLDYAEAGDNIGALLRGVAREDIQRGGVLA							
<i>E. cassel. flavus</i> (A)	TPERDNDKPFMMPVEDVI	SITGRGTATGRVERGQVRVGDVEIVGIADETSTTTVTGVEMFRKLLDYAEAGDNIGALLRGVAREDIQRGGVLA							
<i>E. gallinarum</i> (A)	TPERDNDKPFMMPVEDVI	SITGRGTATGRVERGQVRVGDVEIVGIAEETAKTTVTGVEMFRKLLDYAEAGDNIGALLRGVAREDIQRGGVLA							
<i>E. faecalis</i>	TPERDNDKPFMMPVEDVI	SITGRGTATGRVERGQVRVGDVEIVGIADETAKTTVTGVEMFRKLLDYAEAGDNIGALLRGVAREDIQRGGVLA							
<i>E. avium</i> (A)	TPERDNDKPFMMPVEDVI	SITGRGTATGRVERGQVRVGDVEIVGIDETSKTTVTGVEMFRKLLDYAEAGDNIGALLRGVAREDIQRGGVLA							
<i>E. raffinosus</i> (A)	TPERDNDKPFMMPVEDVI	SITGRGTATGRVERGQVRVGDVEIVGIADETAKTTVTGVEMFRKLLDYAEAGDNIGALLRGVAREDIQRGGVLA							
<i>E. dispar</i> (A)	TPERDNDKPFMMPVEDVI	SITGRGTATGRVERGQVRVGDVEIVGIAEETAKTTVTGVEMFRKLLDYAEAGDNIGALLRGVAREDIQRGGVLA							
<i>E. malodoratus</i> (A)	TPERDNDKPFMMPVEDVI	SITGRGTATGRVERGQVRVGDVEIVGIAEETAKTTVTGVEMFRKLLDYAEAGDNIGALLRGVAREDIQRGGVLS							
<i>E. pseudoavium</i> (A)	TPERDNDKPFMMPVEDVI	SITGRGTATGRVERGQVRVGDVEIVGIAEETAKTTVTGVEMFRKLLDYAEAGDNIGALLRGVAREDIQRGGVLA							
<i>E. sulfureus</i>	TPERDNDKPFMMPVEDVI	SITGRGTATGRVERGQVRVGDVEIVGIAEETAKTTVTGVEMFRKLLDYAEAGDNIGALLRGVAREDIQRGGVLA							
<i>E. saccharolyticus</i>	TPERDNDKPFMMPVEDVI	SITGRGTATGRVERGQVRVGDVVDIVGIAEETAQTTVTGVEMFRKLLDYAEAGDNIGALLRGVAREDIQRGGVLA							
<i>E. solitarius</i>	TPERDNDKPFMMPVEDVI	SITGRGTATGRVERGQVRVGDVEIVGIDETAQTTVTGVEMFRKLLDYAEAGDNIGALLRGVAREDIQRGGVLA							
		ESITGRGTATGRVERGTIKVGDEVDIIGIHEDVKKTTVTGVEMFRKLLDYAEAGDNIGTLLRGVSRDDIERGGVLA							

711 46

10/089177

6/27

<i>L. monocytogenes</i>	REHLLLSRQVGVPYIIV	FINKCDVDDDEELLELEVMEIROLLTEFFPGDDIPVIGSALKALQ	GEADWEAKIDELMEAVDSYIP
<i>E. cassel. flavus (B)</i>	REHLLLSRQVGKHLIV	FINKCDVDDDEELLELEVMEIROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP
<i>E. gallinarum (B)</i>	REHLLLSRQVGKHLIV	FINKCDVDDDEELLELEVMEIROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP
<i>E. durans (B)</i>	REHLLLSRQVGKHLIV	FINKCDVDDDEELLELEVMEIROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP
<i>E. faecium (B)</i>	REHLLLSRQVGKHLIV	FINKCDVDDDEELLELEVMEIROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP
<i>E. hirae (B)</i>	REHLLLSRQVGKHLIV	FINKCDVDDDEELLELEVMEIROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP
<i>E. mundtii (B)</i>	REHLLLSRQVGKHLIV	FINKCDVDDDEELLELEVMEIROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP
<i>E. avium (B)</i>	REHLLLSRQVGKHLIV	FINKCDVDDDEELLELEVMEIROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP
<i>E. pseudoavium (B)</i>	REHLLLSRQVGKHLIV	FINKCDVDDDEELLELEVMEIROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP
<i>E. malodoratus (B)</i>	REHLLLSRQVGKHLIV	FINKCDVDDDEELLELEVMEIROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP
<i>E. raffinosus (B)</i>	REHLLLSRQVGKHLIV	FINKCDVDDDEELLELEVMEIROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP
<i>E. dispar (B)</i>	REHLLLSRQVGKHLIV	FINKCDVDDDEELLELEVMEIROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP
<i>S. pneumoniae</i>	REHLLLSRQVGKHLIV	FINKCDVDDDEELLELEVMEIROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP
<i>S. suis</i>	REHLLLSRQVGKHLIV	FINKCDVDDDEELLELEVMEIROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP
<i>S. pyogenes</i>	REHLLLSRQVGKHLIV	FINKCDVDDDEELLELEVMEIROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP
<i>S. mutans</i>	REHLLLSRQVGKHLIV	FINKCDVDDDEELLELEVMEIROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP
<i>L. lactis</i>	REHLLLSRQVGKHLIV	FINKCDVDDDEELLELEVMEIROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP
<i>T. aquaticus</i>	REHLLLSRQVGKHLIV	FINKCDVDDDEELLELEVMEIROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP
<i>E. coli</i>	REHLLLSRQVGKHLIV	FINKCDVDDDEELLELEVMEIROLLTEFFPGDDIPVIGSALKALQ	GDPAEAAIITLMDTVDEYIP

C f → D g E F

FEI-4C

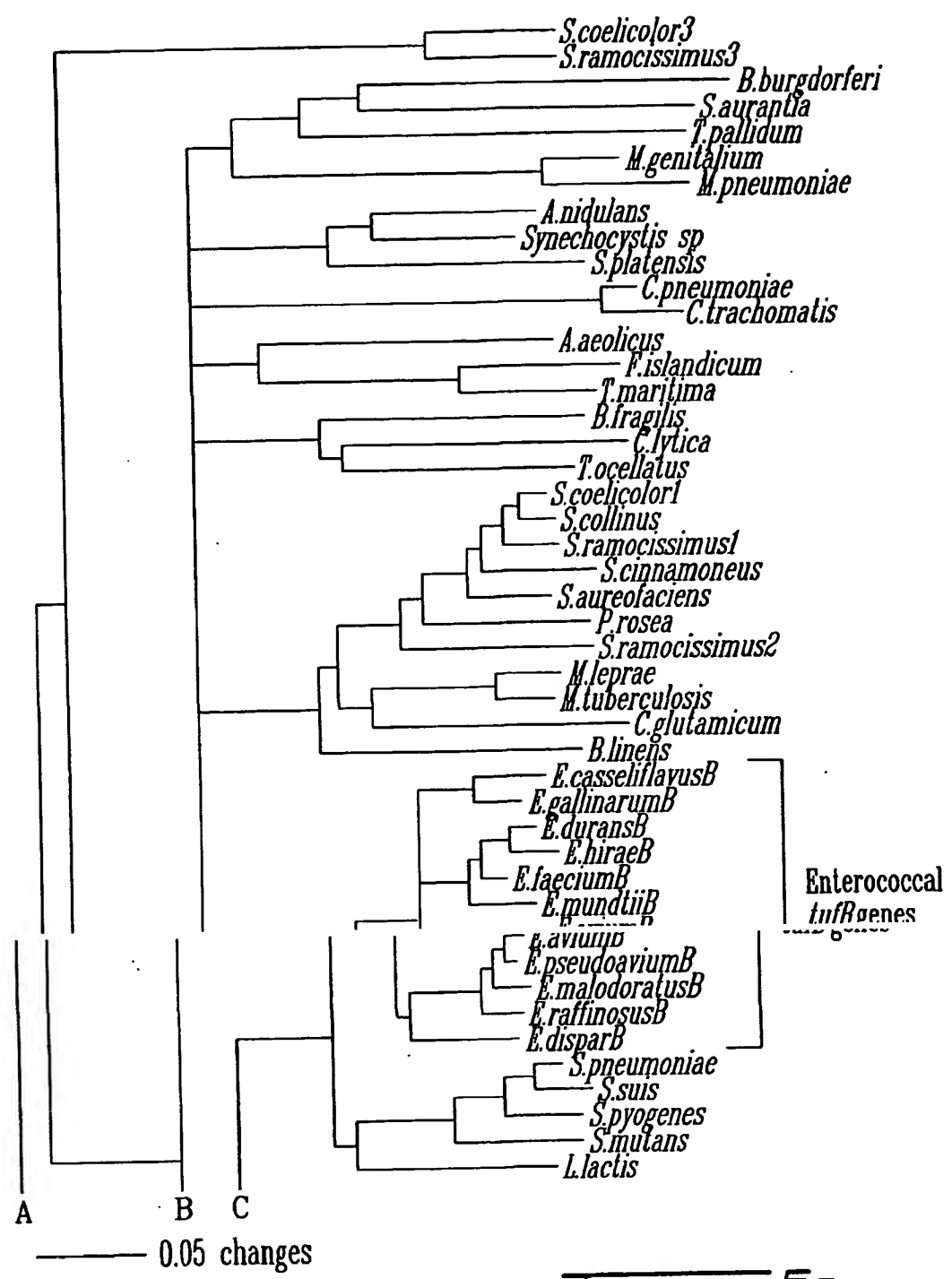
7/27

[illegible]
$$\begin{array}{ccccccccccc} \overline{\mathbf{a}}_2 & \overline{\mathbf{b}}_2 & \overline{\mathbf{c}}_2 & \overline{\mathbf{d}}_2 & \overline{\mathbf{e}}_2 & \overline{\mathbf{f}}_2 & \overline{\mathbf{g}}_2 & \overline{\mathbf{h}}_2 & \overline{\mathbf{i}}_2 & \overline{\mathbf{j}}_2 & \overline{\mathbf{k}}_2 \end{array}$$

File 44

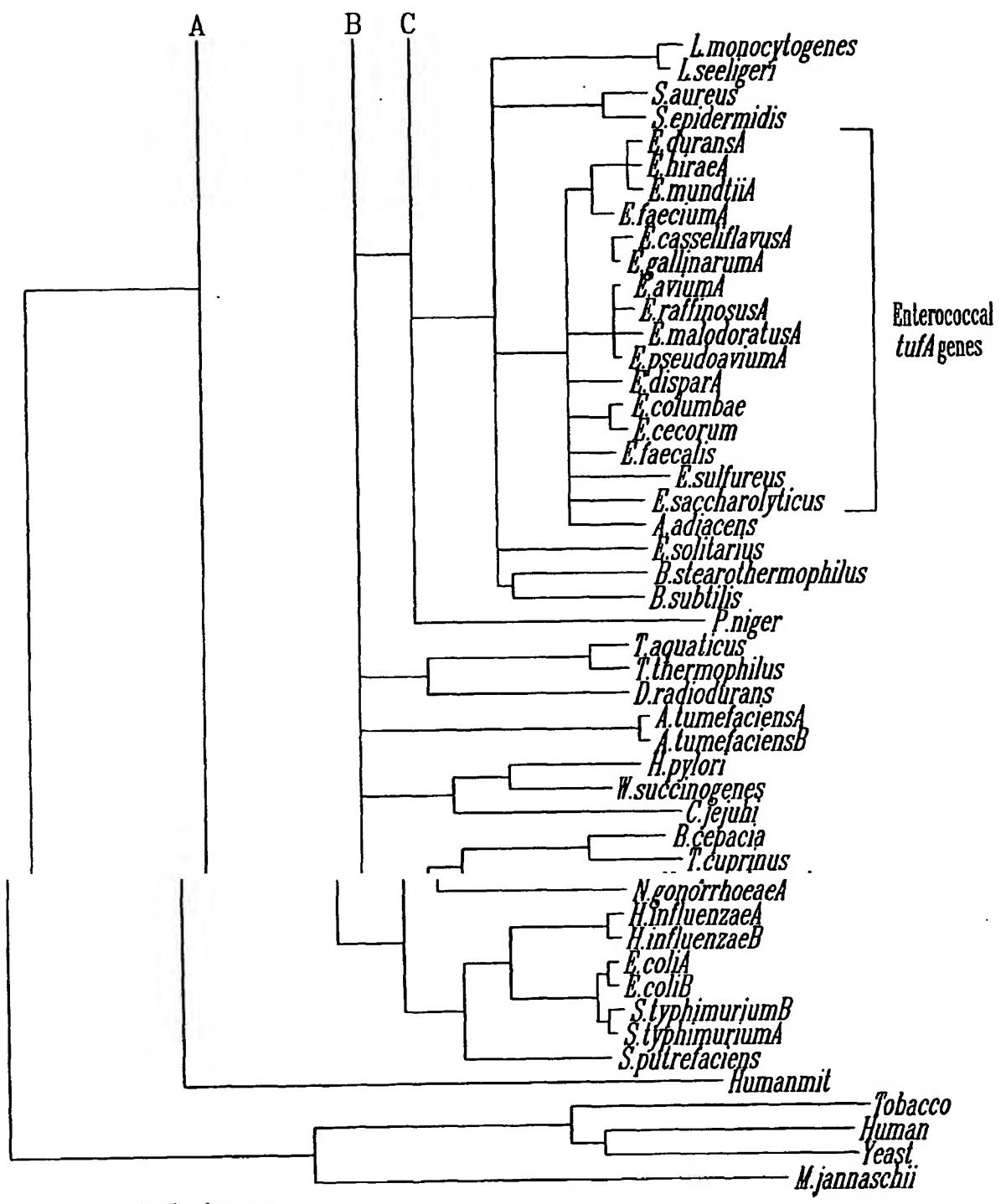
10/089177

8/27



10/089177

9/27



0.05 changes

FIG. 5b

10/089177

10 / 27

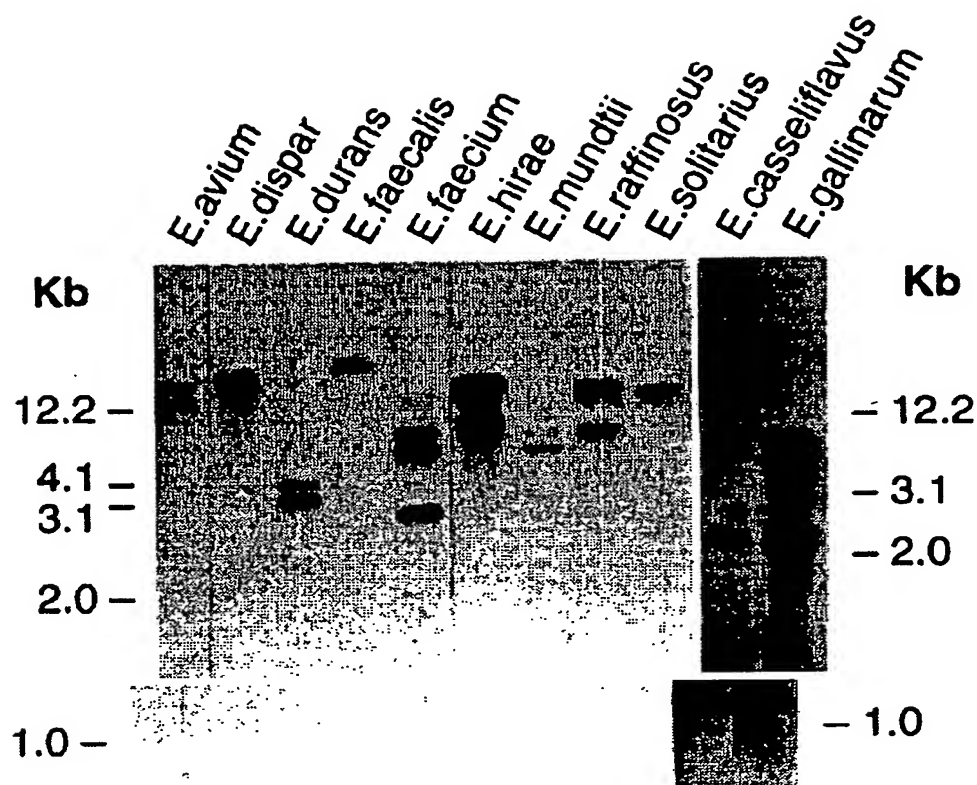


FIG. 5

10/089177

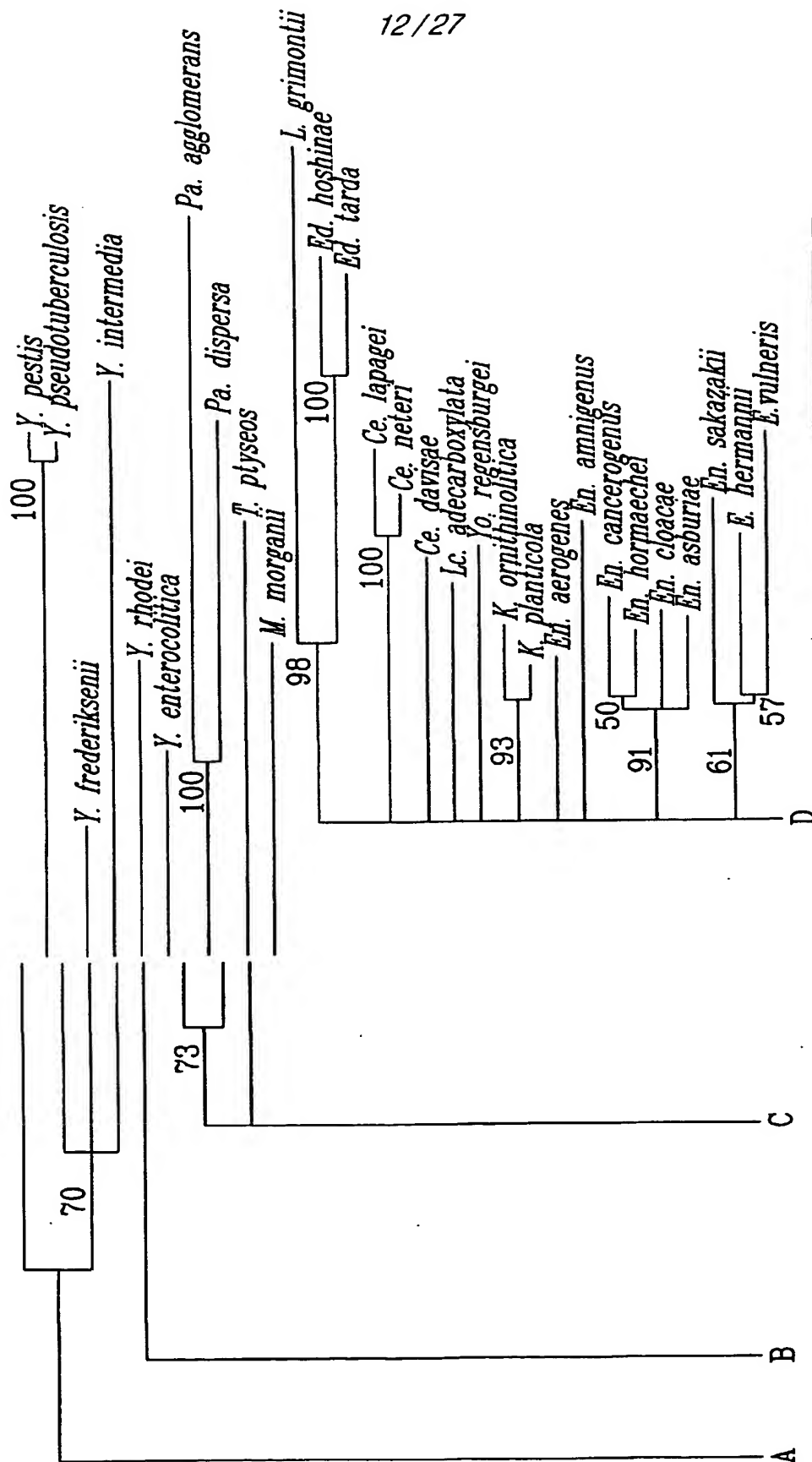
11/27

	301		311	321	331
E. coli	GAGATCGGT	AAGAAGACCG	TTGGG	CGATTCACCG	
E. agglomerans	GACATCGGT	AAGAAGACCG	TTGGG	CGATTCACCG	
P. agglomerans	GAGCTGAAA	AAGAAGATGG	CAGCGCAGTA	CTATTCACCG	
P. dispersa	GACCTGAAA	AAGAAGACCG	CAGCGCTGTA	CTATTCATCG	
T. ptyseos	GACCTGAAG	ACGAAGATGG	TAGCAATGTT	CTATTCACCG	

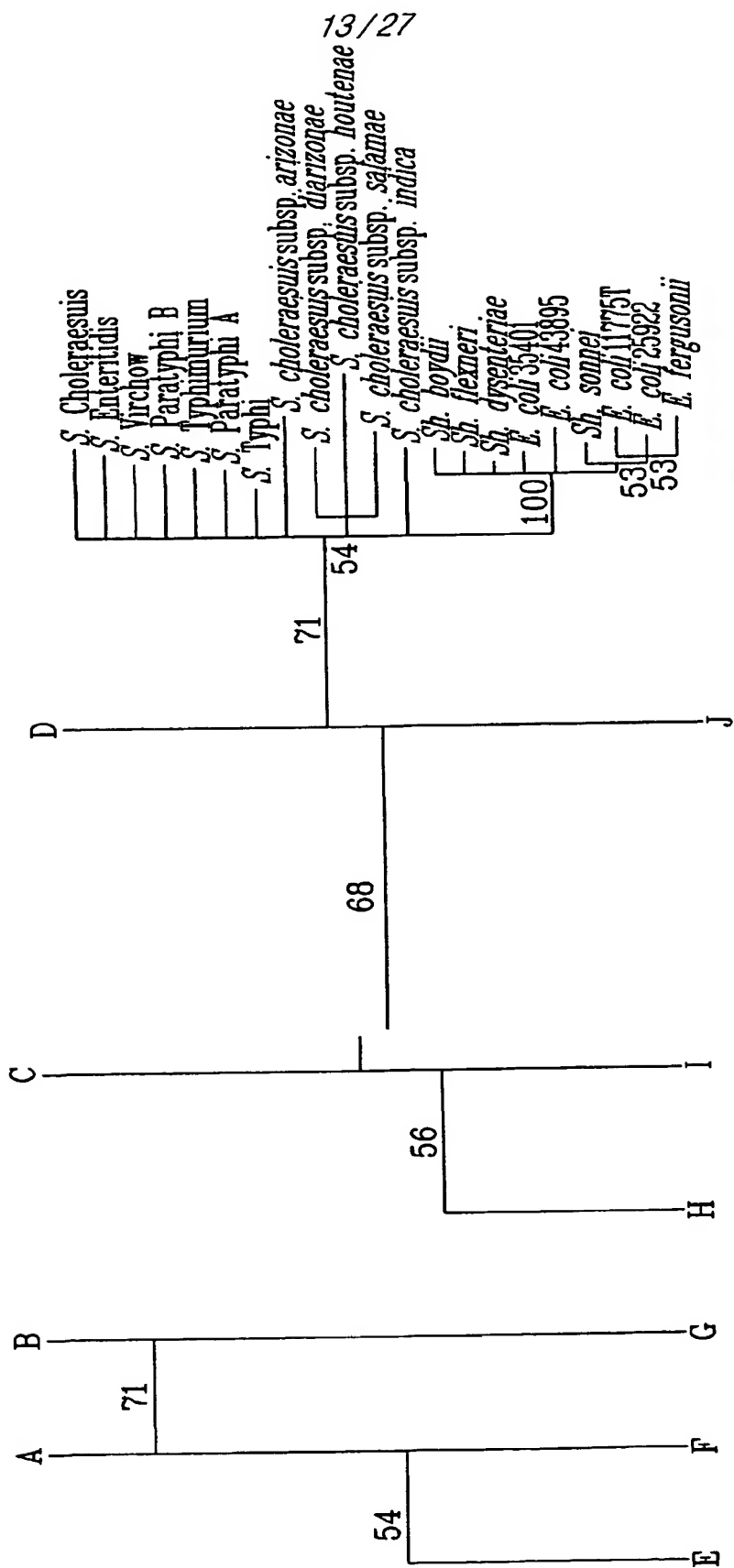
E. coli	~I~G~E~	~E~E~R~W~	~A~	I~H~R~
E. agglomerans	~I~G~E~	~E~E~R~W~	~A~	I~H~R~
P. agglomerans	~L~K~E~	~E~D~G~S~	~A~	V~E~ ~I~A~S~	I~H~R~
P. dispersa	~L~K~E~	~E~D~G~S~	~A~	V~E~ ~V~S~S~	I~H~R~
T. ptyseos	~L~K~N~	~E~D~G~S~	~N~	V~E~ ~V~N~S~	I~H~R~

7

10/089177



10/089177



98-1337

10/089177

14/27

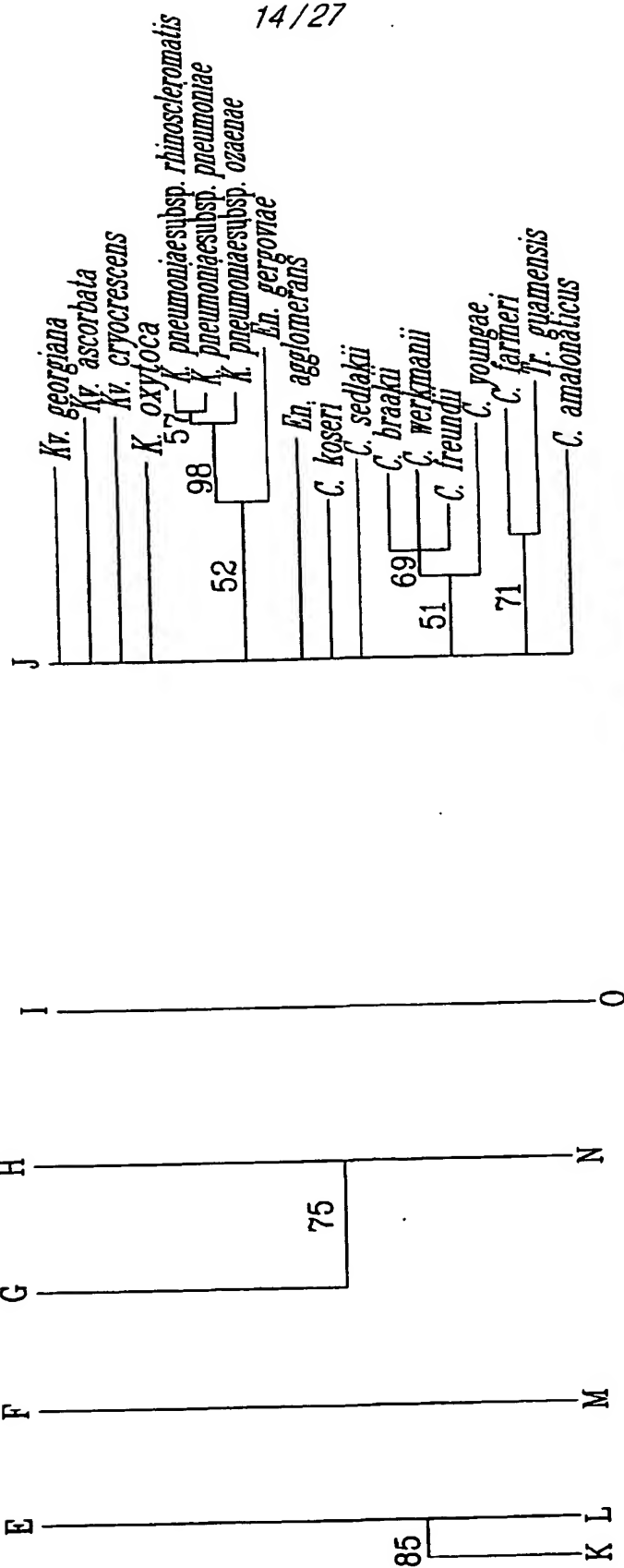


FIG. 1

10/089177

15/27

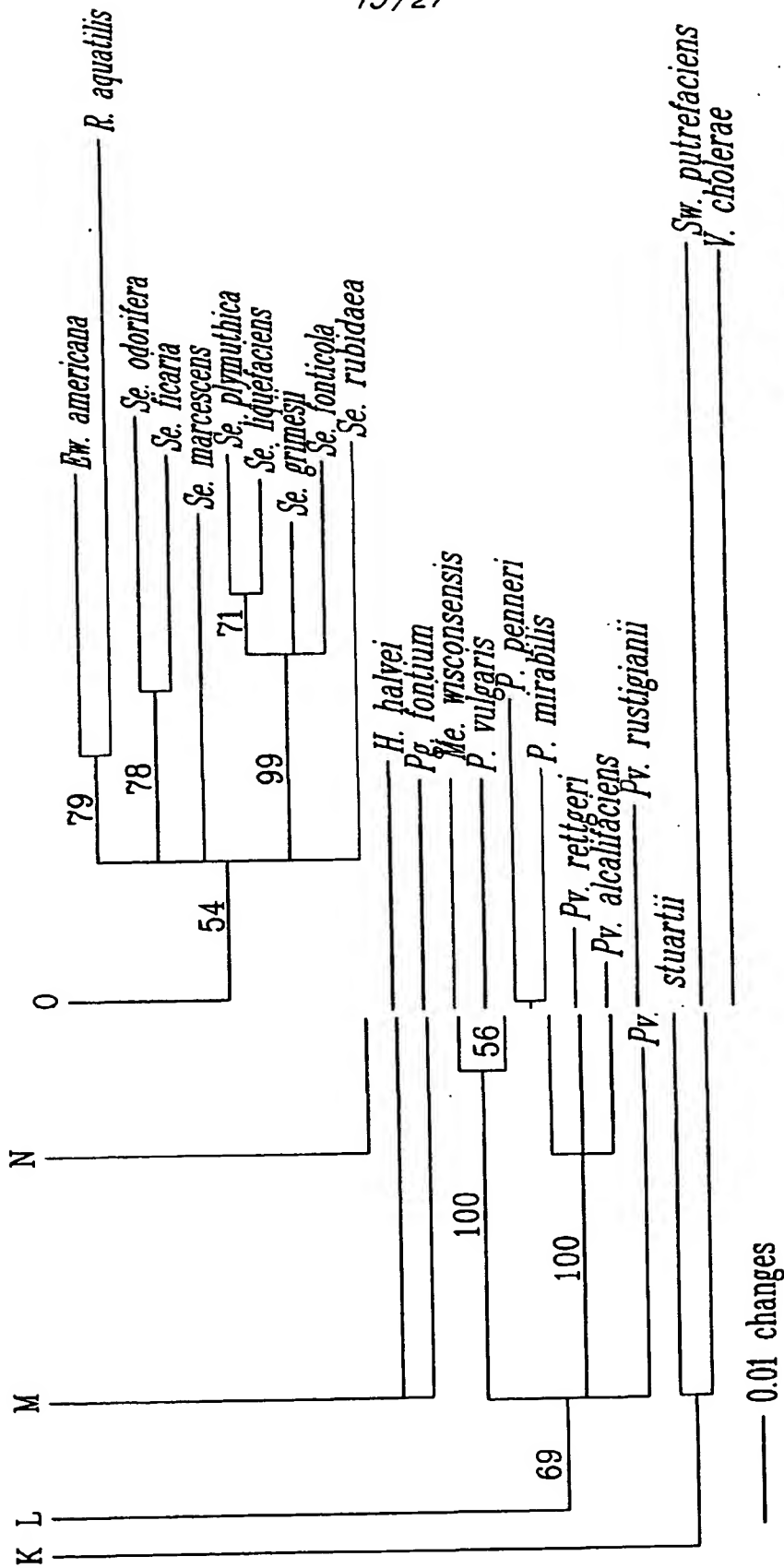
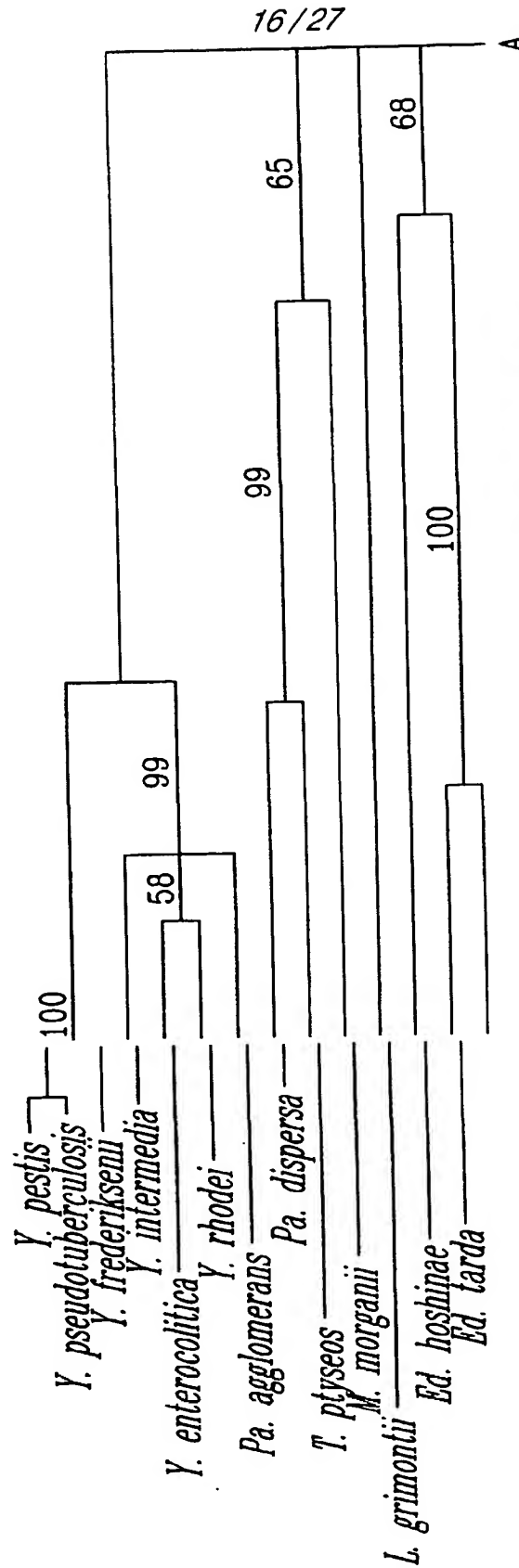


FIG - Ed

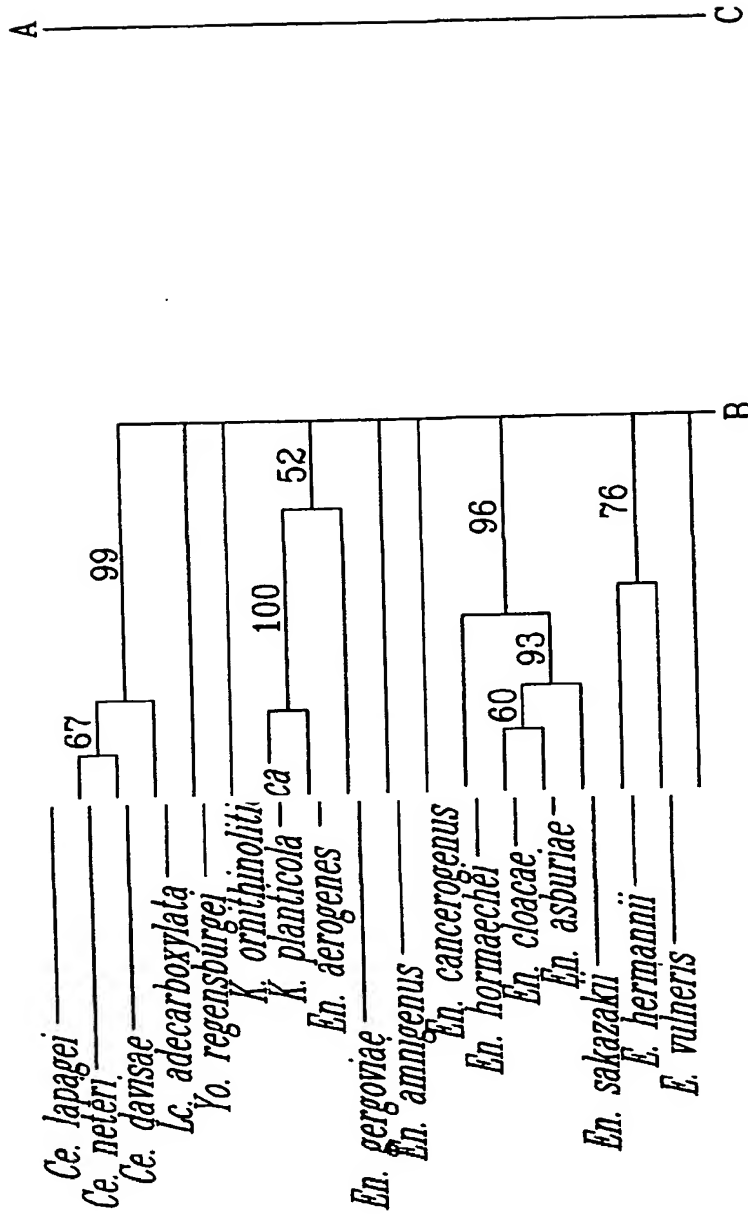
10/089177



FEED-88

10/089177

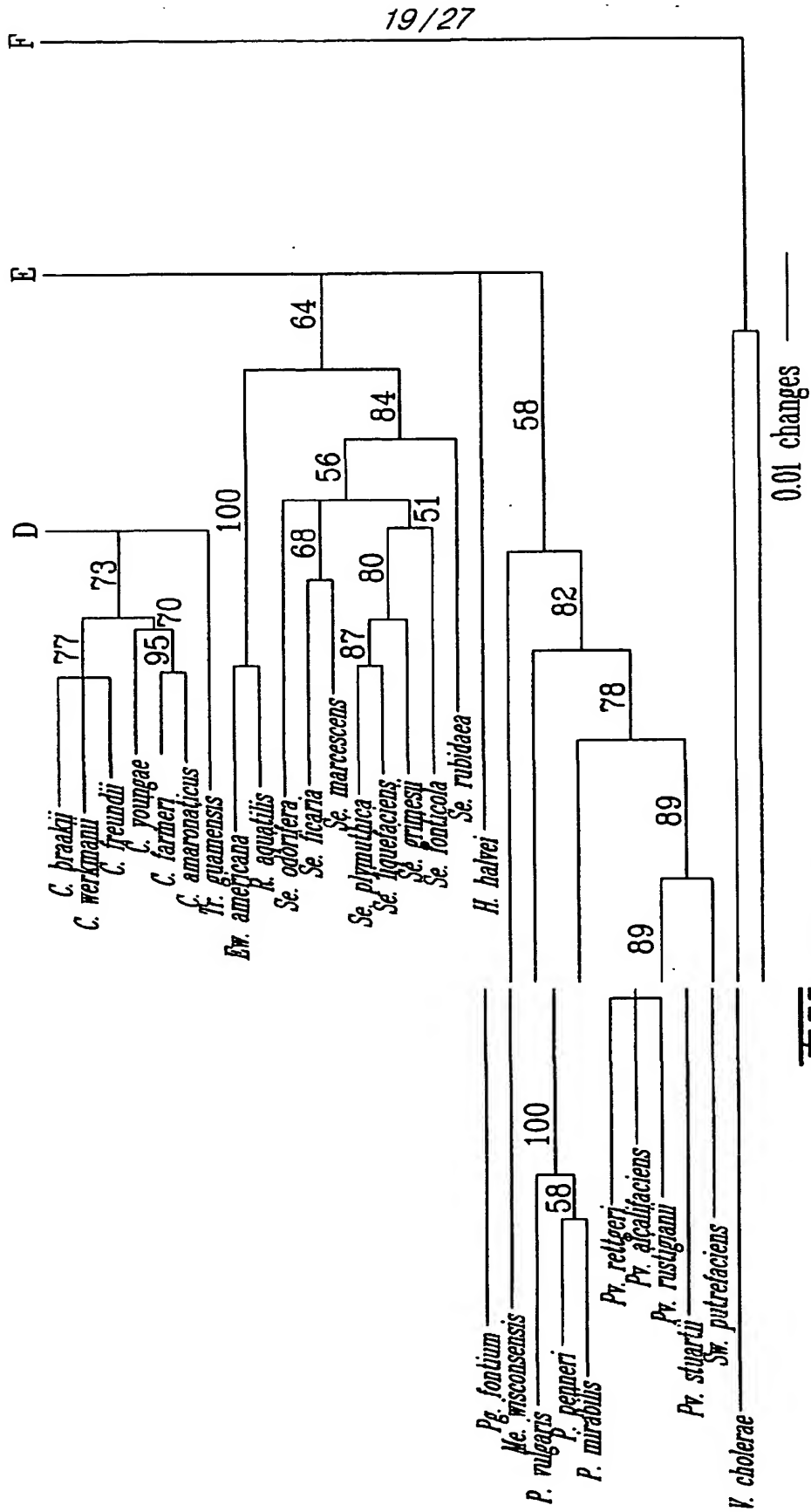
17/27



FILE - BF



10/089177



10/089/77

20/27

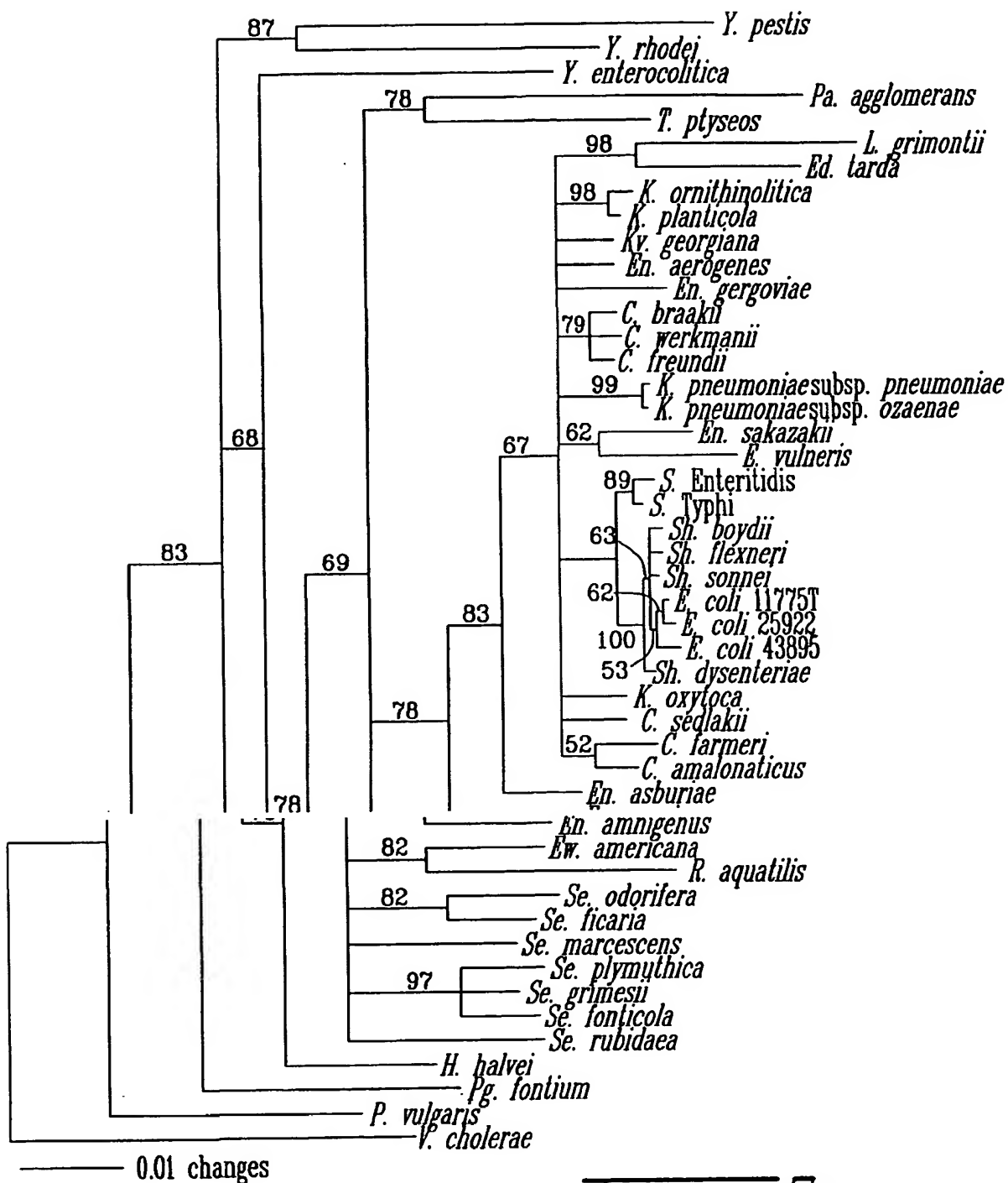
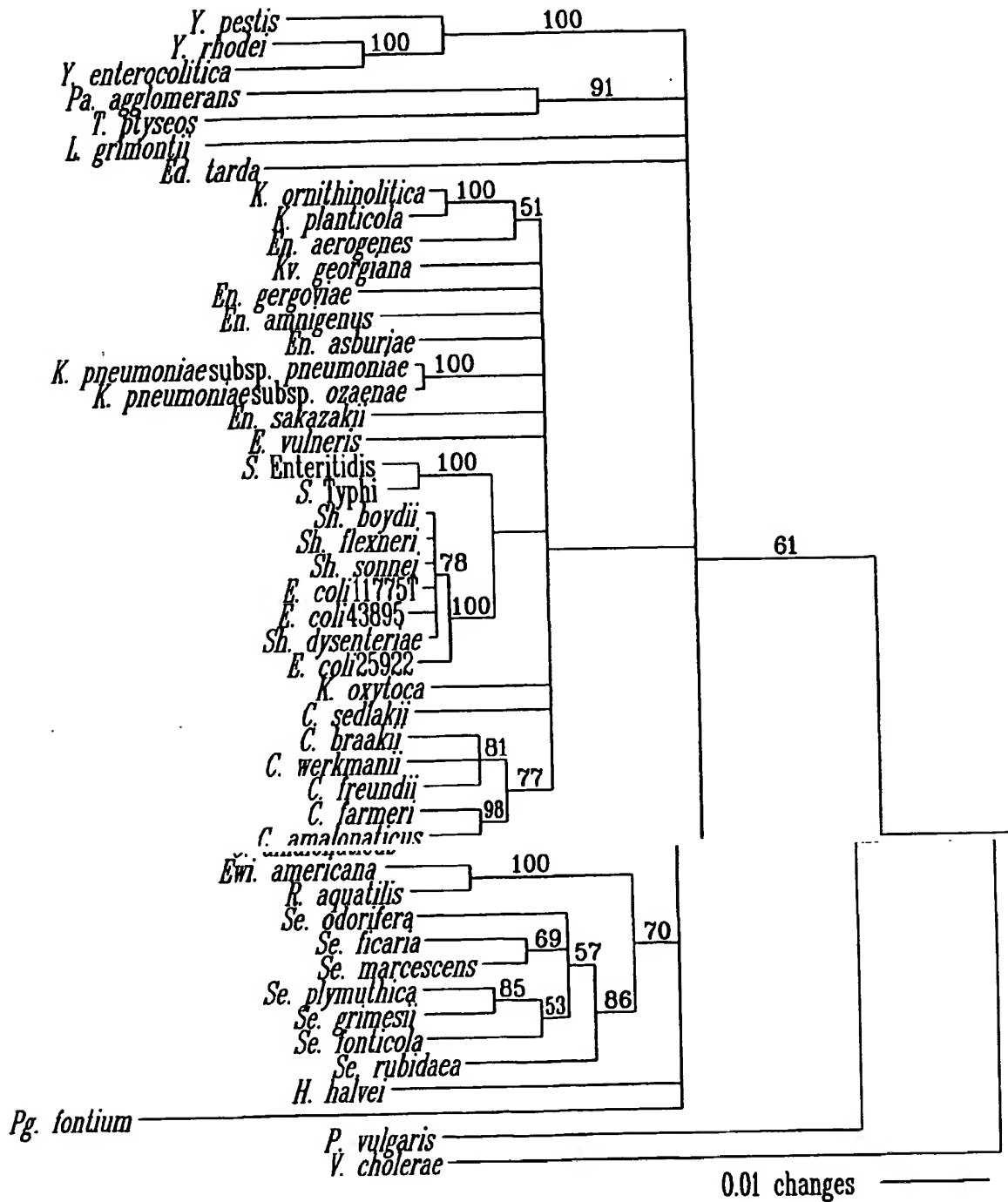


FIG. 9a

10/089/77

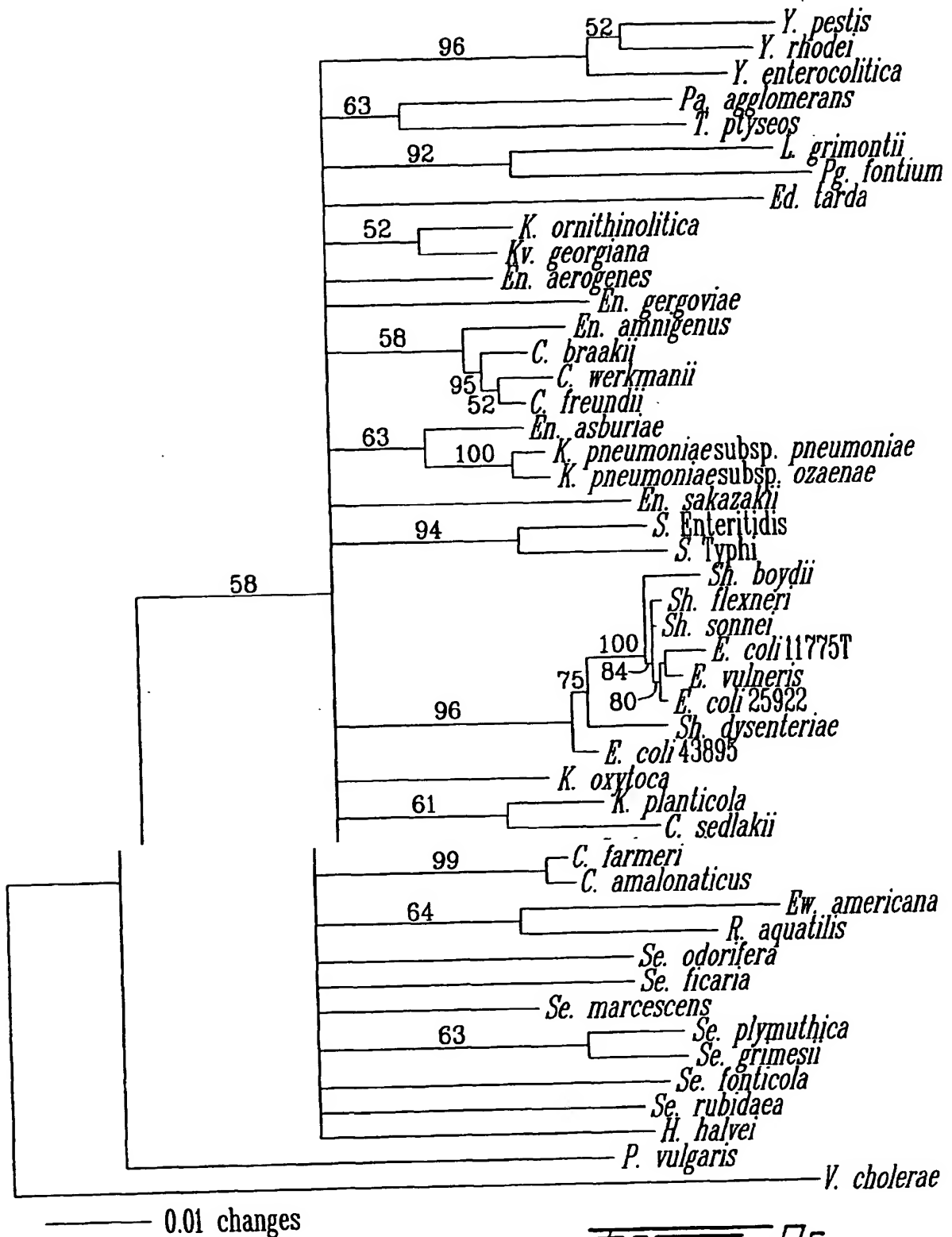
21/27



96

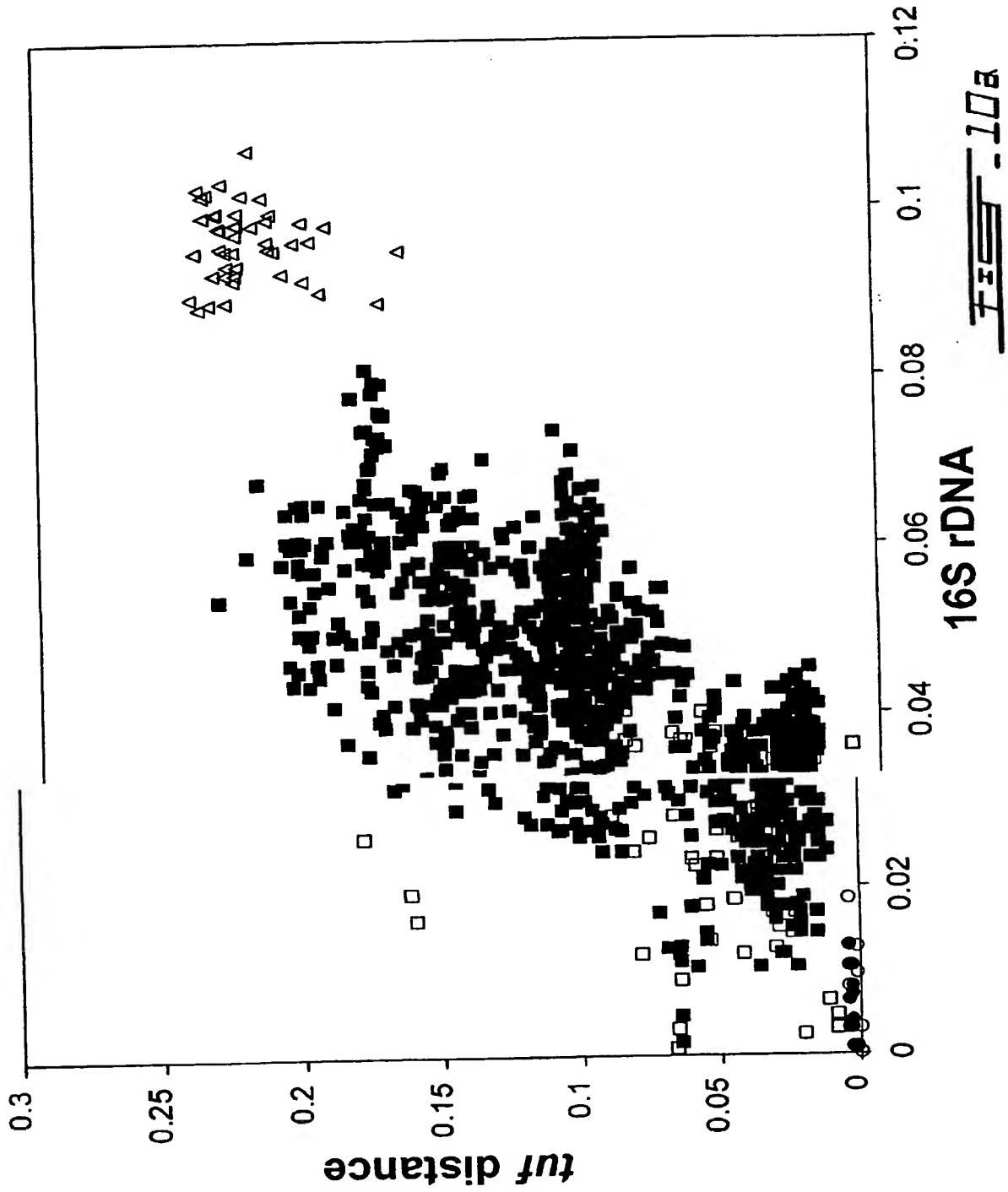
10/089177

22/27



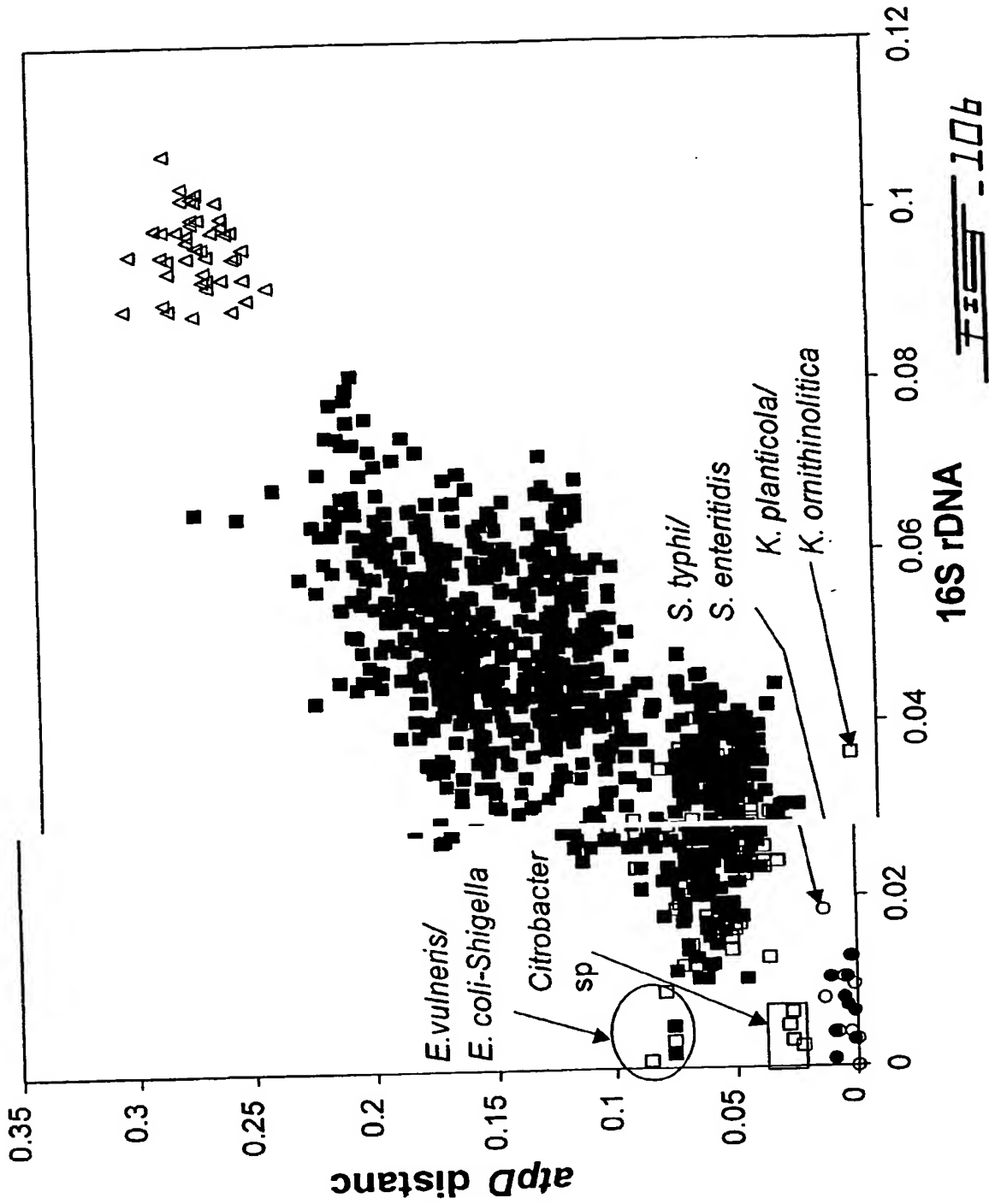
10/089/77

23/27



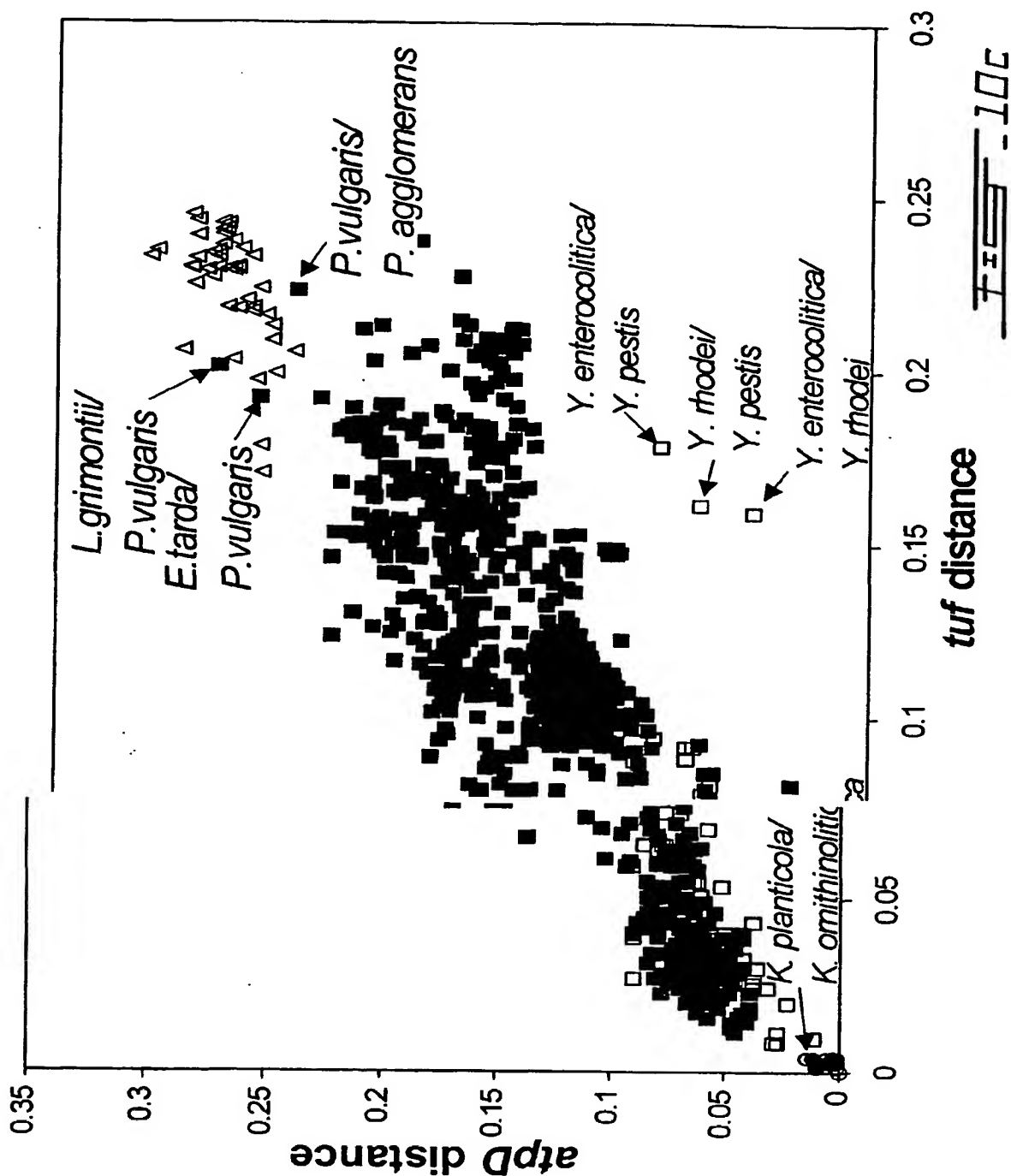
10/089177

24/27



10/08911

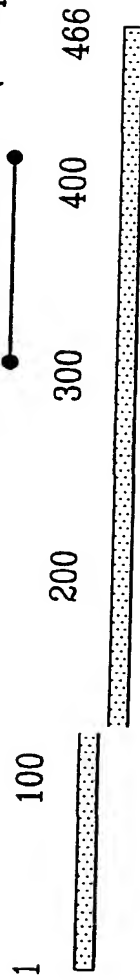
25/27



10/089177

26/27

SEQ ID NO: 118+SEQ ID NO: 119 (118 bp)



VBmcat1-VBmcat2 (93 bp)

VBmcat3-VBmcat4 (140 bp)

VBmcat5-VBmcat6 (219 bp)

VBmcat7-VBmcat8 (160 bp)

VBmcat9-VBmcat10 (167 bp)

FIG. 11

10/089177

27 / 27

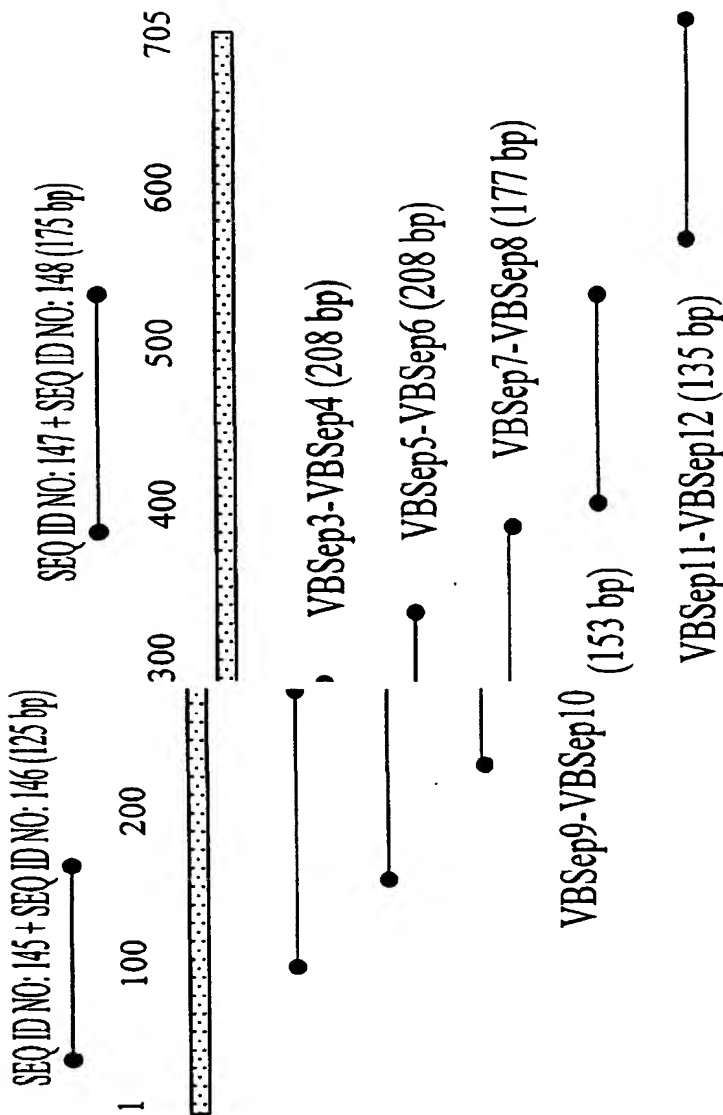


FIG. 12